

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Currently Amended) A method for obtaining wood-cell attributes from cellulose containing samples, comprising the steps of:

radiating a cellulose containing sample with a beam of radiation, said radiation having an energy capable of passing through said sample;

collecting radiation attenuation information from said radiation which passes through said sample;

rotating said source relative to said sample;

repeating said collecting step after said rotating step; [[, and]]

forming a projected image from said radiated attenuation information, said image including resolvable features of said sample, and

determining at least one cell dimension of said sample from said image .

2. (Cancelled).

3. (Currently Amended) The method of claim [[2]] 1, wherein said at least one cell dimension is selected from the group consisting of cell wall thickness, cell diameter (length) and cell vacuole diameter.

4. (Previously Presented) The method of claim 1, wherein said image is a tomographical image.

5. (Previously Presented) The method of claim 1, wherein said sample is wood.

6. (Previously Presented) The method of claim 1, wherein said sample comprises a reconstituted wood product.

7. (Previously Presented) The method of claim 6, wherein said reconstituted wood product is at least one selected from the group consisting of strand board, fiber board and fiber-resin wood composite products.

8. (Previously Presented) The method of claim 1, wherein said resolvable features in said image are less than approximately 100  $\mu\text{m}$ .

9. (Previously Presented) The method of claim 1, wherein said resolvable features in said image are less than approximately 20  $\mu\text{m}$ .

10. (Previously Presented) The method of claim 1, wherein said resolvable features in said image are less than approximately 5  $\mu\text{m}$ .

11. (Previously Presented) The method of claim 1, wherein said resolvable features in said image are less than approximately 2  $\mu\text{m}$ .

12. (Previously Presented) The method of claim 1, said resolvable features in said image are less than approximately 1  $\mu\text{m}$ .

13. (Previously Presented) The method of claim 1, wherein said image is a 3-dimensional image.

14. (Previously Presented) The method of claim 1, wherein said radiation is at least one selected from the group consisting of X-rays, gamma rays, neutrons, positrons and electrons.

15. (Cancelled).

16. (Cancelled).

17. (Cancelled).

18. (Currently Amended) The method of claim [[15]] 1, further comprising the step of positioning [[said]] a source of said beam of radiation closer to said target than said target is to a detector used to form said image, wherein a spot size of said beam of radiation primarily determines the resolution provided by said image.

19. (Cancelled).

20. (Cancelled).

21. (Cancelled).

22. (Cancelled).

23. (Cancelled).

24. (Cancelled).

25. (Previously Presented) A method for sorting cellulose containing products, comprising the steps of:

radiating a cellulose containing sample with a beam of radiation, said radiation having an energy capable of passing through said sample;

collecting radiation attenuation information from said radiation which passes through said sample;

rotating said source relative to said sample;

repeating said collecting step after said rotating step;

forming a projected tomographical image from said radiated attenuation information, said tomographical image including resolvable features of said sample, and

separating said sample into categories based on at least one resolvable feature derivable from said tomographical image.

26. (Previously Presented) The method of claim 25, further comprising the step of determining at least one cell dimension of said sample from said image.

27. (Previously Presented) The method of claim 26, wherein said at least one cell dimension is selected from the group consisting of cell wall thickness, cell diameter (length) and cell vacuole diameter.

28. (Previously Presented) The method of claim 25, wherein said cellulose containing sample is wood.

29. (Previously Presented) The method of claim 25, wherein said cellulose containing sample is a reconstituted wood product.

30. (Previously Presented) The method of claim 29, wherein said reconstituted wood product is at least one selected from the group consisting of strand board, fiber board and fiber-resin wood composite products.

31. (Previously Presented) The method of claim 25, wherein said resolvable features in said image are less than approximately 100  $\mu\text{m}$ .

32. (Previously Presented) The method of claim 25, wherein said resolvable features in said image are less than approximately 20  $\mu\text{m}$ .

33. (Previously Presented) The method of claim 25, wherein said resolvable features in said image are less than approximately 5  $\mu\text{m}$ .

34. (Previously Presented) The method of claim 25, wherein said resolvable features in said image are less than approximately 2  $\mu\text{m}$ .

35. (Previously Presented) The method of claim 25, said resolvable features in said image are less than approximately 1  $\mu\text{m}$ .

36. (Previously Presented) The method of claim 25, wherein said image is a 3-dimensional image.

37. (Previously Presented) The method of claim 25, wherein said radiation is at least one selected from the group consisting of X-rays, gamma rays, neutrons, positrons and electrons.

38. (Previously Presented) A method for detecting wood destroying insect damage, comprising the steps of:

radiating a cellulose containing sample with a beam of radiation, said radiation having an energy capable of passing through said sample;

collecting radiation attenuation information from said radiation which passes through said sample;

rotating said source relative to said sample;

repeating said collecting step after said rotating step;

forming a projected tomographical image from said radiated attenuation information, and determining whether said sample includes said wood destroying insect damage from said image.

39. (Previously Presented) The method of claim 38, wherein said wood destroying insect damage is from a termite.

40. (Previously Presented) The method of claim 38, wherein said cellulose containing sample is wood.

41. (Previously Presented) The method of claim 38, wherein said sample is a reconstituted wood product.

42. (Previously Presented) The method of claim 39, wherein said reconstituted wood product is at least one selected from the group consisting of strand board, fiber board and fiber-resin wood composite products.

43. (Previously Presented) The method of claim 38, wherein resolvable features in said image are less than approximately 100  $\mu\text{m}$ .

44. (Previously Presented) The method of claim 38, said resolvable features in said image are less than approximately 1  $\mu\text{m}$ .

45. (Previously Presented) The method of claim 38, wherein said image is a 3-dimensional image.

46. (Previously Presented) The method of claim 38, wherein said radiation is at least one selected from the group consisting of X-rays, gamma rays, neutrons, positrons and electrons.

47. (Currently Amended) A system for obtaining physical features from cellulose containing samples, comprising:

a radiation source for radiating a cellulose containing sample with a beam of radiation, said radiation having an energy capable of passing through said sample;

a radiation detector for collecting radiation attenuation information from said radiation which passes through said sample; [[, and]]

structure for rotating said source relative to said sample, wherein a projected tomographical image is formed from said radiated attenuation information, said tomographical image including resolvable features of said sample, and

structure for determining at least one cell dimension of said sample from said image.

48. (Cancelled).

49. (Previously Presented) The system of claim 47, wherein said at least one cell dimension is selected from the group consisting of cell wall thickness, cell diameter (length) and cell vacuole diameter.

50. (Currently Amended) The system of claim ~~[[48]]~~ 47, wherein said cellulose containing sample is wood.

51. (Currently Amended) The system of claim ~~[[48]]~~ 47, wherein said cellulose containing sample comprises a reconstituted wood product.

52. (Currently Amended) The system of claim ~~[[48]]~~ 47, wherein said reconstituted wood product is at least one selected from the group consisting of strand board, fiber board and fiber-resin wood composite products.

53. (Currently Amended) The system of claim ~~[[48]]~~ 47, wherein said system can resolve features in said image which are less than approximately 100  $\mu\text{m}$ .

54. (Currently Amended) The system of claim ~~[[48]]~~ 47, wherein said system can resolve features in said image which are less than approximately 20  $\mu\text{m}$ .

55. (Previously Presented) The system of claim 47, wherein said system can resolve features in which said image are less than approximately 5  $\mu\text{m}$ .

56. (Previously Presented) The system of claim 47, wherein said system can resolve features in said image which are less than approximately 2  $\mu\text{m}$ .

57. (Previously Presented) The system of claim 47, wherein said system can resolve features in said image which are less than approximately 1  $\mu\text{m}$ .

58. (Previously Presented) The system of claim 47, wherein said image is a 3-dimensional image.

59. (Previously Presented) The system of claim 47, wherein said radiation is at least one selected from the group consisting of X-rays, gamma rays, neutrons, positrons and electrons.

60. (Cancelled).

61. (Cancelled).

62. (Cancelled).

63. (Cancelled).

64. (Cancelled).

65. (Cancelled).

66. (Cancelled).

67. (Cancelled).

68. (Cancelled).